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No. 521

Leave No Trace!

A program to teach skills for protecting the wilderness environment

United States Department of Agriculture
Forest Service
FS-521

Your name _____

Wilderness

What does the word "wilderness" mean to you? When you plan a trip to the wilderness, what do you expect to find? Write down your thoughts and discuss them with your group.

To most folks, a wilderness is a piece of wild land or back country where they can find solitude, and which looks natural. The imprint of human activities is absent. It is an area where you can be alone and enjoy the outdoors without loud noise, trash, or hustle-and-bustle.

A lot of back country is found in our national forests and other public lands. The Congress of the United States has included some of this back country in special areas called "wildernesses."

Generally, a wilderness has no roads, and motor vehicles are not allowed. Conveniences such as tables, toilets, and fireplaces are not appropriate in a wilderness. The environment is protected so that plants and animals have a natural home. The scenic beauty of the land is much as it was in centuries past.

A Wilderness Challenge

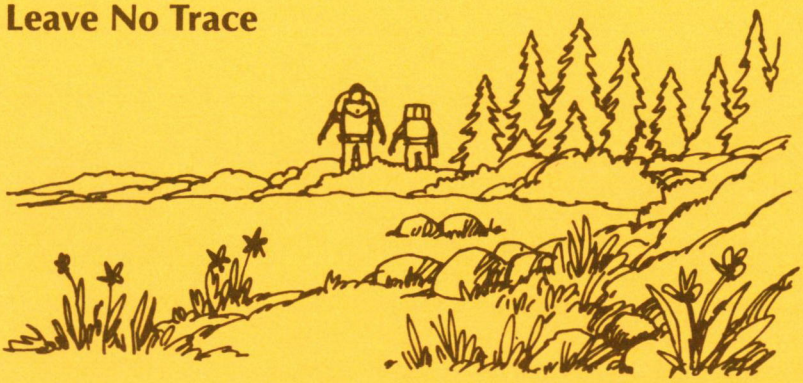
One hundred-and-fifty to 200 years ago, people traveled quietly and carefully. They left little evidence of their trails and campsites as possible in order to minimize the chance of conflict with others and maximize the chance of successful hunting.

Today you and thousands of others look forward to visiting a wilderness or back-country area. In many areas, so many people are coming that the popular camping places are overcrowded—evidence of people, horses, tents, and campfires is everywhere. This heavy use creates some problems. What do you think they are? Write down your ideas and discuss them with your group.

Because most of us do not live outdoors, we unthinkingly do things that mar the scene. Here are some of them:

- ✔ **Set up lots of brightly colored tents and other gear and wear brightly colored clothes, which dot the landscape.**
- ✔ **Crowd into small camping areas in big groups.**
- ✔ **Make trails across meadows and hillsides.**
- ✔ **Trample vegetation and cause soil erosion in meadows and near trails, lakes, and streams.**
- ✔ **Leave campfire scars.**
- ✔ **Scar or cut green trees.**
- ✔ **Pollute streams and lakes.**
- ✔ **Leave and/or scatter human waste and garbage.**
- ✔ **Make lots of noise, which may disturb other people and wildlife.**

Leave No Trace



You can do a lot to protect the wilderness from these problems. That is what this certification program is all about. It is designed to suggest ways you can **Leave No Trace!** the next time you visit a wilderness or back-country area.

After reading and discussing this brochure and successfully completing the test, you will earn a **Leave No Trace!** certificate. Your new-found skills in **Leave No Trace!** will help you to:

1. Travel and camp so others will have a hard time seeing you. You will blend in with the forest environment, much as the Indian people and mountain men did or as the deer, elk, and other wild animals do. You will see more wildlife if you are inconspicuous.

2. **Leave No Trace!** of your visit. You will leave no marks along the trail, and your campsite will be clean and will look natural. You will preserve a true wilderness character for you and others to enjoy in the future.

Now, let us review and discuss how to do it. At the end, you will take the test, and your instructor will grade it. You must pass the test (70 percent or better) to qualify for the certificate.

Pre-Trip Plans

Wilderness trips require lots of planning to be safe and fun. USDA's Forest Service, libraries, bookstores, outdoor equipment stores, and outdoors organizations have good information to help you plan a trip. You can also talk to people who have done a lot of wilderness camping. They may have ideas on proper equipment and supplies.

In this booklet, we will focus on just those items that will help you **Leave No Trace!** when you make your trip.

Group size: Think small! A large crowd is difficult to organize and to keep together as you travel. Campsites for big groups are hard to find, and human waste disposal becomes a problem. Plan for no more than 10 or 12 people—fewer if possible. If your group exceeds 10 or 12, consider going to a large campground with toilets, tables, and paved paths designed to accommodate many people. Large groups are not appropriate in a wilderness.

Where To Go: To get away from crowds and noise, choose a less-popular area for your trip. You may want to go someplace besides a designated wilderness. There is a lot of exciting back country that offers more solitude than a highly publicized wilderness.

When To Go: Most people head for the wilderness in midsummer. If trails are dry, you might enjoy a late-spring or early-fall trip to avoid summer crowds. During the fall few people visit backcountry areas, and the scenery is breathtaking.

Another good time to go is during the week when most people are working. Avoid the holiday and weekend rush.

Gear: Fires may not be permitted in some areas because of dry weather or scarce firewood. Carry a backpacking stove so you will not have to eat cold food for the whole trip. Stoves do not scar the landscape as campfires do.

To travel and camp inconspicuously, select dark-colored tents, clothing, and packs when you buy new gear. Earth-tone rusts, browns, and greens blend in best with the forest. Oranges, blues, and other bright colors stand out like spotlights and contribute to a crowded feeling.

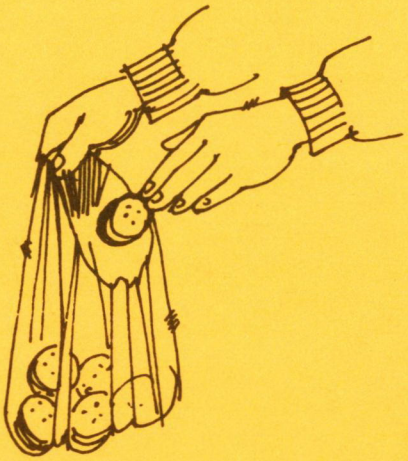
Food Packaging: Carry lightweight, nutritious foods in plastic bags or other containers that can be easily burned or packed out. Dried or freeze-dried foods are good choices. Repackage foods from boxes, bottles, and cans into plastic bags to save weight and space.

Leave canned or bottled food home. Empty bottles, cans, and aluminum foil must be packed back home. They cannot be buried or burned in the wilderness.

Other Items: Take a trash bag or two to pack out your garbage and litter that others may have left behind. A lightweight shovel, trowel, or ice axe will help you dispose of human waste. (We'll learn more about that later.)

STOP! Discuss what you have just read with your group. Following is a checklist of the main points. Are there other things you can do to plan a successful **Leave No Trace!** trip?

- ✔ **Plan for a group of no more than 10 or 12 people.**
- ✔ **Obtain information about various areas and regulations governing their use well ahead of time.**
- ✔ **Select a less-popular area to visit.**
- ✔ **Plan a spring, fall, or midweek trip to avoid crowds on summer weekends and holidays.**
- ✔ **When buying packs, clothing, and tents, select dark colors that blend with the forest.**
- ✔ **Repackage food in plastic bags or other lightweight, burnable, or pack-out containers.**



Travel

Trails: Most trails are designed to help you get from one place to another without difficulty and to drain off water with as little soil erosion as possible. While hiking or riding horseback, you should stay on the trail. If you travel to the sides of the trail, others may follow. This starts new paths for erosion and destroys the scenery.

Some folks think they save time by cutting across switchbacks (a trail that doubles back on itself). Cutting switchbacks uses more energy and ends up costing time. It also creates an ugly gully where valuable soil is washed away. Stay on the trail! You will feel better, and the land will look better.

If trails are muddy following spring snowmelt or heavy storms, give them time to dry out before you begin your trip. Then you will not have to wade through the mud and churn up the trail surface, making it rough for others to follow.

Cross Country: If you strike out away from trails, select rocky or hard ground or forested routes rather than meadows and wet places. Then your tracks will not be visible. If you must cross tundra or meadow, spread out to avoid trampling a path through easily crushed vegetation.

Hanging paper signs, tying ribbons, or carving on trees to mark a path for others all detract from the scenery. Mark your travel plan on a map; then let everyone who must follow know where you will be.

STOP! Discuss what you have just read with your group. Following is a checklist of the main points. Are there other things you can do to **Leave No Trace!** while traveling?

- ✔ **Stay on the designated trail while hiking or riding.**
- ✔ **Avoid cutting across switchbacks.**
- ✔ **Let muddy trails dry out, if you can, before traveling.**
- ✔ **When traveling cross country, select rocky ground or forested areas where your tracks will not be seen.**
- ✔ **Avoid hanging signs and ribbons or carving on trees to mark cross-country travel routes.**

Campsite

Where: You will enjoy more solitude and be less conspicuous if you select a campsite away from the favorite spots. If you do not fish, choose a basin without lakes or choose a lake without fish.

Locate your camp 200 feet or more from lakes, streams, meadows, and trails. Camping next to a busy trail or in full view along lakes, streams, and in meadows robs others of an unmarred scene and a feeling of solitude.

The best campsites are found near small, forested ridges and hills. These elevated sites are warmer than meadows and streamsides where cold air settles at night. They also (usually) have fewer insects and less delicate vegetation to trample.

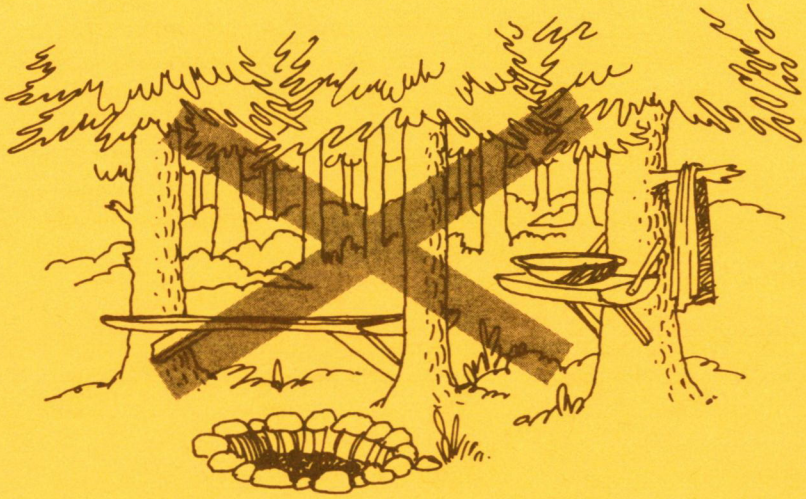
What to Do: Arrange your camp so trees, shrubs, and rocks hide it from view. Not being able to see you will enhance, for others, the feeling of solitude.

If you camp on high forested ground, you will not have to ditch around your tent. Ditches can start erosion and long-lasting scars—just the opposite of a good **Leave No Trace!** camp. Plan to stay in one place no more than 4 days to minimize waste accumulation and avoid injury to plants around the campsite.

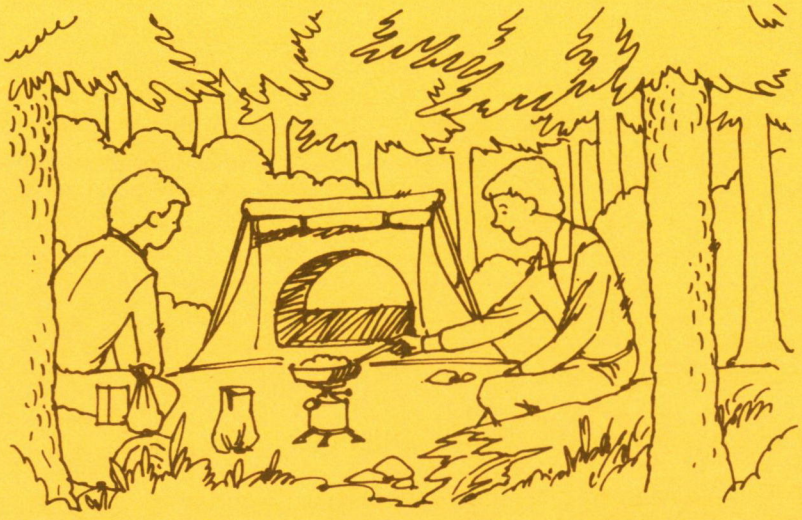
Avoid building structures like lean-to's, fire circles, bough beds, and gear racks. Do not cut green trees or boughs. When you break camp, police the area to make sure you **Leave No Trace!** of your visit.

STOP! Discuss what you have just read with your group. Following is a checklist of the main points. Are there other things you can do to **Leave No Trace!** of your camp?

- ✔ **Select a less-popular site at least 200 feet from trails, lakes, streams, and meadows.**
- ✔ **Select a spot free of delicate plants. Small forested ridges are good places.**
- ✔ **Hide your camp from view.**
- ✔ **Avoid ditching around your tent.**
- ✔ **Stay no more than 4 days in one place.**
- ✔ **Avoid building camp structures.**



Fires



At heavily used campsites, blackened fire rings dot the landscape and much of the available firewood has been burned. Green trees and limbs are cut for fuel. There is really not much of a wilderness feeling left.

Stoves: Carry a lightweight gas stove with you. You will be assured of fast, clean, cooking heat even above timberline where wood is very scarce. Another plus—stoves **Leave No Trace!** of their use when you move on.

Heavily Used Areas: Fires are not permitted in some heavily used areas. Check at the local Ranger Station to find out about fire restrictions before starting your trip.

If fires are permitted, use an existing fire circle rather than build a new one. Burn charred wood and garbage to a white ash, extinguish the fire with water, and remove bits of garbage that will not burn. Leave a clean fire circle for the next campers.

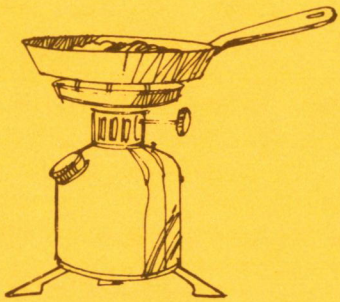
Little-Used Areas: When camping in little-used areas, you may not find an old fire circle. To build a fire, select a spot away from trees and shrubs. Remove twigs and needles or sod until you reach cool soil, piling them a safe distance from the fire for later use. Resist the temptation to build a rock fire circle. You may want to use a small rock or two to support cooking pots, but a full circle is not needed and does not prevent fire from spreading.

Never build a fire against a large rock where smoke will blacken it for all to see or in a meadow where the scar will stand out. Select a sandy spot or hard ground where the scar can be hidden afterwards.

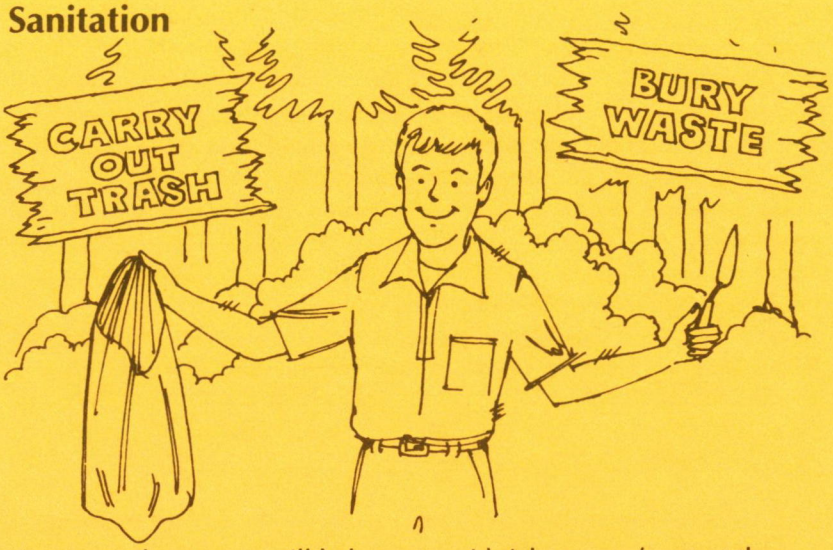
Wood: Burn small sticks gathered from the ground rather than cut standing dead trees. (Never cut green trees or branches!) Feed the fire slowly to avoid burning nearby vegetation. Small wood will burn completely, providing a bed of clean, hot coals for cooking. When you leave camp, you will not have partially burned logs to dispose of.

STOP! Discuss what you have just read with your group. Following is a checklist of the main points. Are there other things you can do to **Leave No Trace!** of your fire?

- ✔ **Use a lightweight gas stove rather than build a fire.**
- ✔ **If fires are permitted in heavily used areas, use an existing fire circle rather than build a new one.**
- ✔ **Never build fires against large rocks or in meadows. The scars are hard to hide.**
- ✔ **In little-used areas, save needles and twigs or sod to cover the scar after the fire is out.**
- ✔ **Avoid building new fire circles.**
- ✔ **Burn small sticks gathered from the ground rather than cut standing dead or green trees.**
- ✔ **Make sure your fire is completely out (cold to the touch) before leaving.**
- ✔ **In little-used areas, cover the fire scar with twigs and needles or replace sod.**



Sanitation



Keeping a clean camp will help you avoid sickness *and* protect the wilderness environment from pollution. Besides, human waste, toilet paper, and trash look terrible scattered about your favorite campsite.

Carry a small shovel or trowel to help dispose of human waste and waste water. You will also need a trash bag to pack out non-burnable garbage.

Human Waste: For individuals, dig shallow "catholes" in the top 6 to 8 inches of soil. Catholes should be at least 200 feet away from water, campsites, and trails. Cover feces with soil. Urine need not be buried but should be kept well away from water, camp, and trails.

For a group, dig a trench 12 inches deep and no more than 12 inches wide, at least 200 feet away from water, camp, and trails. After each use, cover feces with dirt and compress with your foot or shovel. When the waste gets within 4 inches of the surface, fill in the latrine and camouflage it with rocks and needles.

Washing: Keeping clean lifts your spirits and prevents disease—a lot more fun than filth and sickness. But don't wash in a stream or lake. Even biodegradable soap pollutes the water and injures fish and other aquatic life.

To wash dishes and clothes or to give yourself a sponge bath, use a bucket or washpan away from the lake or stream. Use biodegradable soap. Dig a small hole and pour the soapy water in it when you are through. Fill in the hole when you break camp.

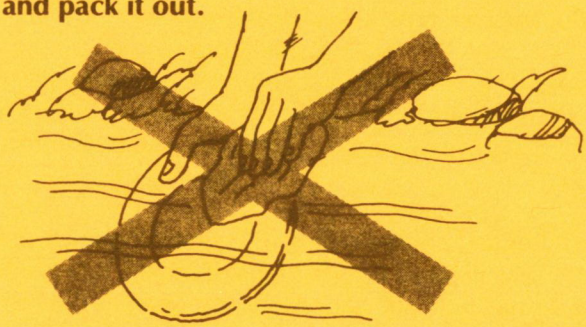
After a sponge bath and rinse, you might want to jump in the lake or stream for a swim. In either case, you will be clean, which will help to prevent water pollution.

Trash: Here is where that trash bag comes in handy. You will want to pack out *every bit of garbage that cannot be completely burned.* Don't bury it. If you plan and package your food properly, you will have very little garbage left over. Pick up trash left by others and carry the **Leave No Trace!** ethic the extra mile—a true "good turn" for all who enjoy the wilderness and back country.

Fish Guts: Bury fish guts in your latrine. Never leave them along lake and stream banks, or toss them in the water. Catch only enough fish to eat at your next meal. Fish spoil quickly, so it doesn't pay to keep them for several days to take home.

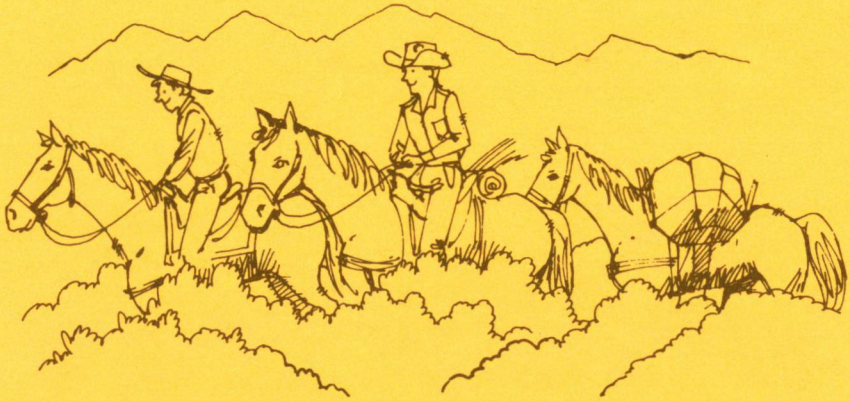
STOP! Discuss what you have just read with your group. Following is a checklist of the main points. Are there other things you can do to **Leave No Trace!** of human waste, water pollution, or trash?

- ✔ **Dig catholes and latrines 200 feet or more from water, camp, and trails.**
- ✔ **Wash dishes and clothes or take a bath using a pan or bucket well away from streams or lakes.**
- ✔ **Pour wash water in a hole.**
- ✔ **Bury fish guts in your latrine.**
- ✔ **Cover latrines and wash-water holes thoroughly before breaking camp.**
- ✔ **Pick up every bit of trash that will not burn (yours and others) and pack it out.**



Horses

(mules, burros, and llamas, too)



Some people enjoy the companionship of horses in the back country. And some people, because of a disability or limited mobility, may need the help of animals to visit the back country.

Whenever horses or other animals are used for riding and packing, special care must be taken to **Leave No Trace!** To minimize livestock problems, take as few animals as possible—one pack animal for every three or four people in your group. Taking lightweight foods and camp gear will help you reduce the number needed.

Tying: When you unpack, saddle up, or stop for a rest, tie your horse to a stout tree at least 8 inches in diameter. Smaller trees are tender and easily damaged by restless animals and abrasive ropes. Select a dry spot to avoid trampling tender vegetation and wet soil.

If your horse must be tied for a long time, stretch a rope (well above the horse's head) between two large trees in a dry spot. Tie your horse to the rope hitch rail so it can move about freely (reducing the tendency to paw the ground and scar trees and other vegetation).

Grazing: Rather than tying livestock, consider hobbling, which allows them to graze over a large area. Again, select a dry spot to avoid trampling vegetation and soil. If you picket, move the animal often, and pull picket pins out when you leave. Hobbling is best because it allows your horse to graze over a large area.

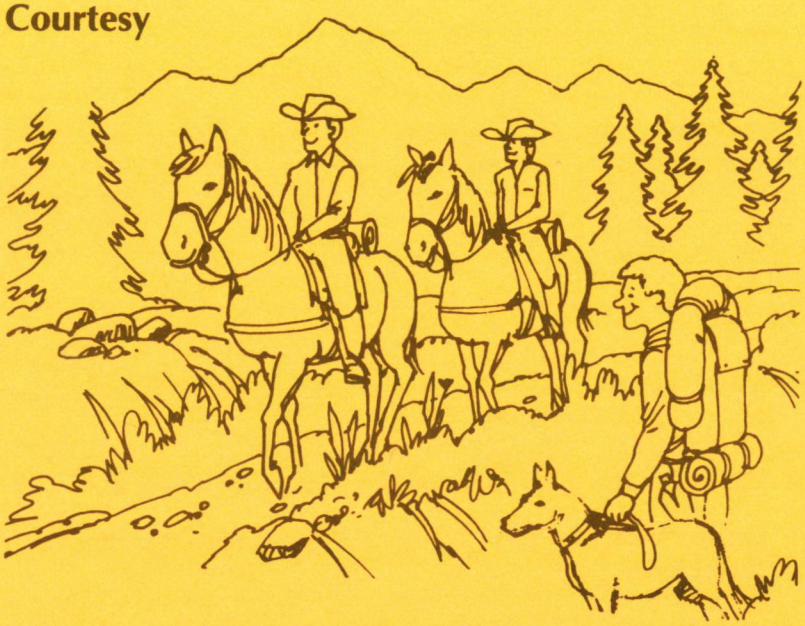
Grazing animals and those animals tied for long periods should be kept well away from lakes, streams, and camp to avoid water pollution and unpleasant conditions created by manure and urine.

Cleanup: If you follow the suggestions given so far, cleanup will not be a problem. Whenever manure accumulates, scatter it with sticks to prevent flies from gathering and to speed decomposition. The area will look better too.

STOP! Discuss what you have just read with your group. Following is a checklist of the main points. Are there other things you can do to **Leave No Trace!** of vegetation and soil damage or water pollution resulting from horses?

- ✔ **Take only the minimum number of animals needed.**
- ✔ **During short stops, tie horses to trees at least 8 inches in diameter.**
- ✔ **For long periods, tie horses to a high line stretched between two sturdy trees.**
- ✔ **If you picket horses, move them often**
- ✔ **Keep tied, picketed, and hobbled horses well away from camp and from lakes and streams.**
- ✔ **Tie, picket, or hobble horses only in dry areas to minimize trampling damage.**

Courtesy



The actions of people and the sights and sounds encountered have a lot to do with whether or not we enjoy a wilderness or back-country experience. We have already discussed many ideas—most of which boil down to good common sense and courtesy. Let us conclude with a few additional suggestions.

Noise: Horses are easily spooked by strange sights and sounds. When hikers and riders meet along the trail, bucking horses and possible injuries to their riders can be avoided if hikers will step off the downhill side of the trail, stand still, and speak softly until the horses pass.

Radios, tape players, loud musical instruments, and loud boisterous activity are out of place in a wilderness. Wild birds and animals are quickly frightened by noise.

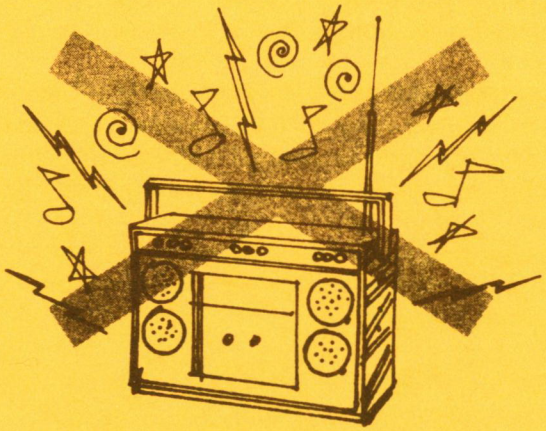
You will see more wildlife, and everyone will have a better time if you keep the noise down while on the trail and in camp.

Pets: Dogs are predators. Their natural instinct is to chase other animals, including strange people. It is really best to leave them at home. If you do take a dog along, keep it under control at all times to avoid frightening wildlife and other people.

Beauty: Wildflowers, picturesque dead trees, and unusual rocks are all part of the wilderness. If you pick the flowers, cut standing dead trees (snags) for firewood, or chip away pieces of rock, much beauty is lost, particularly around popular trails and campsites. Please leave them for all to enjoy.

STOP! Discuss what you have just read with your group. Following is a checklist of the main points. Are there additional acts of courtesy you can perform to enhance another's visit?

- ✔ **When they meet, hikers should step off the lower side of the trail, stand still, and talk quietly while riders pass.**
- ✔ **Avoid making loud music and other noise that disturbs wildlife and campers.**
- ✔ **Keep pets under control at all times. Better still, leave them at home.**
- ✔ **Leave flowers and picturesque rocks and snags for others to enjoy.**



Test

You must answer 70 percent of the following questions correctly in order to pass this test and become certified in Wilderness Skills.

Are you ready? Is your pencil sharp? When your instructor signals, start the test.

True-False

1. A wilderness looks natural and is an area where you can find solitude without loud noise and trash.

   ☐ True
   ☐ False

2. **Leave No Trace!** means you will leave no marks of your visit and your campsite will be left clean and will look natural.

   ☐ True
   ☐ False

3. Pre-trip planning will help you **Leave No Trace!** of your visit.

   ☐ True
   ☐ False

4. It is best to visit wilderness areas in large groups of 25 or more.

   ☐ True
   ☐ False

5. It is better to build fires in wilderness areas than to carry your own small stove.

   ☐ True
   ☐ False

6. Since back country is so large and spacious, radios, loud games, and lots of shouting will probably not disturb others.

   ☐ True
   ☐ False

7. You can avoid polluting streams and campsites by tying or picketing horses away from these areas.

   ☐ True
   ☐ False

8. Horses should be tied to young, small trees since they are not easily damaged.

   ☐ True
   ☐ False

9. Earth-tone colors such as rust, brown, and green blend in best with the forest.

   ☐ True
   ☐ False

10. Cutting across trail switchbacks causes soil erosion and mars the scenery.

    ☐ True
    ☐ False

Choose the best answer:

1. The two basic elements to **Leaving No Trace!** of your visit are: (choose two)

   ☐ a. Be inconspicuous.
   ☐ b. Wash your dishes in the nearest stream or lake.
   ☐ c. Bury your garbage.
   ☐ d. Leave your campsite looking like no one had been there.

2. The size of the group you go with is important. There should be no more than:

   ☐ a. 25 people.
   ☐ b. 10 or 12 people.
   ☐ c. 4 people, one dog, three parakeets, and 4 horses.

3. When selecting a site for your camp, you should:

   ☐ a. Get as close to the supply of water as possible.
   ☐ b. Camp close to a trail so you won't get lost.
   ☐ c. Camp at least 200 feet from lakes, streams, and trails.
   ☐ d. Camp in the open so the sun will warm your tent.

4. While you are at your camp, you should: (choose two)

- ☐ a. Be as inconspicuous as possible.
- ☐ b. Build new fire rings since old ones look unsanitary.
- ☐ c. Build lean-to's and benches for convenience.
- ☐ d. Bury human waste 6 to 8 inches deep, at least 200 feet from camp and sources of water.

5. Most people go to wilderness areas to:

- ☐ a. Exercise and get in good condition.
- ☐ b Save money.
- ☐ c. Get away from the crowds and noise of city life.

6. The best times to go into wilderness areas are:

- ☐ a. During the week rather than on weekends.
- ☐ b. Early in the season.
- ☐ c. Late in the season.
- ☐ d. All of the above.

7. When choosing camping equipment, you should select:

- ☐ a. Equipment that is bright and shiny so you can find it in the forest.
- ☐ b. Equipment that is old and worn so it is comfortable.
- ☐ c. Equipment that has dark, earth-tone colors.

8. In planning your food supply, you should:

- ☐ a. Make sure the food is in air-tight cans or bottles.
- ☐ b. Re-pack foods into lightweight bags of plastic. Use dried or freeze dried foods.
- ☐ c. Take several kinds of canned soft drinks since they are lightweight and high in sugar for quick energy.

9. When traveling in a wilderness, you should:

- ☐ a. Always stay on the main trail and avoid shortcutting across trails.
- ☐ b. Be quiet.
- ☐ c. Keep pets under control at all times.
- ☐ d. All of the above.

Complete the following:

1. The main reason **Leave No Trace!** camping is being emphasized is

   _____

   _____

   _____

2. Activities that are NOT appropriate while in wilderness areas are:

   a.

   b.

   c.

3. Name three things which should be included in your plans for a wilderness camping trip or experience.

   a.

   b.

   c.

4. Describe how you should do the following:

   a. Wash dishes and clothes or take a bath. _____

   _____

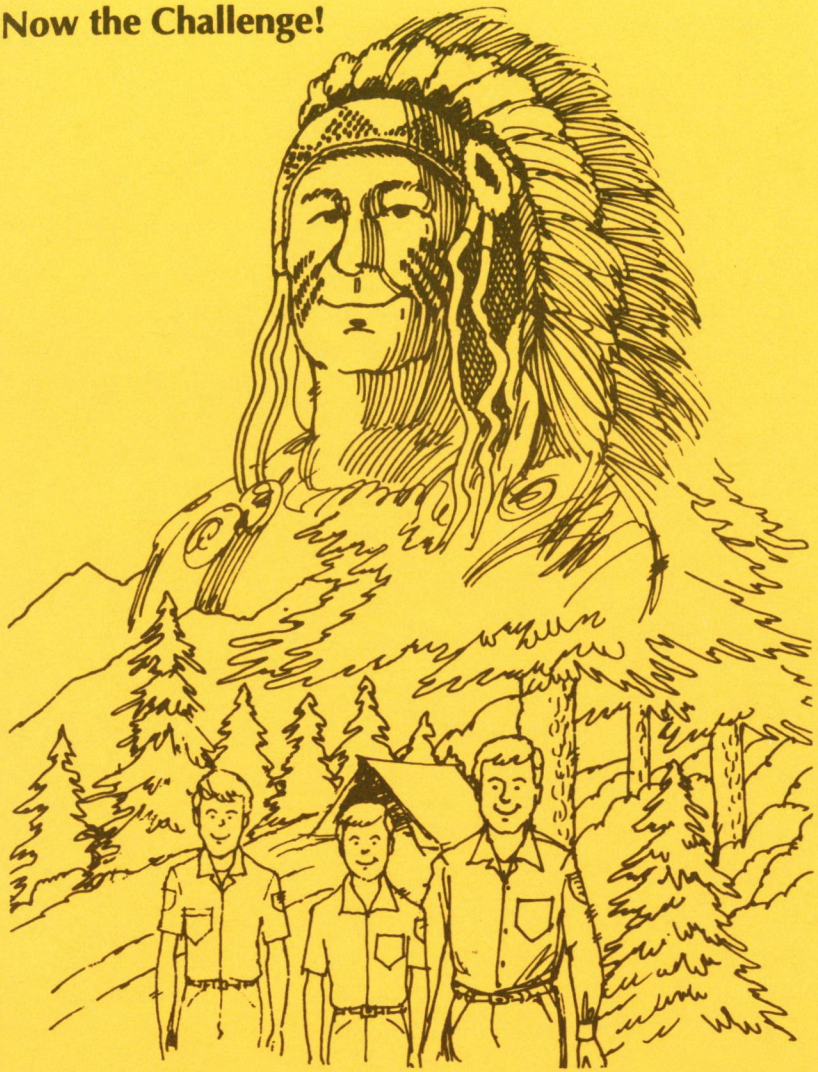
   b. Dispose of trash that can't be burned. _____

   _____

   c. Dispose of human waste. _____

   _____

Now the Challenge!



When you pass the test, you will know the basic skills to **Leave No Trace!** in wilderness and other back-country areas. Now go out and practice them! That is the real test. You will have fun as you try to match the skills of Indian people and mountain men in the wilderness 200 years ago.

As you gain proficiency, teach others how. The task for mountain men and Indian people was to survive. Today wilderness is trying to survive the effects of people. Working together—you as the visitor and your Forest Service friends as the managers—we can ensure that wilderness does survive. Thanks for doing your part.

*U.S. Government Printing Office: 1993-350-382

Leave No Trace!

Answers to Booklet Quiz

A. True—False	Points Each Answer
1. True	4
2. True	4
3. True	4
4. False	4
5. False	4
6. False	4
7. True	4
8. False	4
9. True	4
10. True	4

B. Choose the Best Answer	Points
1. a&d	4
2. b	4
3. c	4
4. a&d	4
5. c	4
6. d	4
7. c	4
8. b	4
9. d	4

C. Complete the Following

1. To protect the wilderness from damage and preserve solitude so others can enjoy it also.
(6 points)

2. • Loud music - radios, tape players.
• Loud noise - loud games.
• Building lean-to's, bough beds, and other structures.
• Not properly disposing of human waste.
• Leaving trash.
• Traveling and camping in groups larger than 10 or 12.
• Cutting across trail switchbacks.
• Disturbing other visitors and wildlife.
• Washing dishes and hands in lakes or streams.
• Leaving traces of your visit.
• Hanging signs, ribbons, or carving trees.
• Camping closer than 200 feet to a trail, lake, or stream.
• Ditching around tents.
• Building large fires.
• Tying horses to small trees.
• Burying cans and bottles.
• Letting pets run loose.
• Picking flowers.
(These are the main ones and there are others you may think of.) (6 points)

3. • When you purchase equipment, buy earth-tone or dark colors; avoid wearing bright colors.
• Plan to go in small groups of less than 10 or 12.
• Use a small gas stove rather than build fires.
• Take a small trowel to bury human waste.
• Repack your food into small, lightweight containers.
• Plan to go on week days, early spring, or late fall; avoid weekends and holidays.
• Plan to go to less-popular areas.
• Obtain information from the nearest Ranger Station on where to go.
• Take bags to carry out your garbage.
• Plan to picket or hobble your horses.
• Plan to control your pets, or better, leave them at home.
(These are the main ones; you may think of others.)
(6 points)

4. • Wash away from streams and lakes.
• Pack out all unburnable trash. Do not bury it!
• Dig a small hole 6 to 8 inches deep at least 200 feet from water, camp, and trails. After use, cover feces with soil.
(6 points)

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